



IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Cancelled).

Claim 2 (Previously Presented): The method of claim 25, wherein the adjusting step further comprises:

dividing the power of the subcarriers by the sum of the squared magnitude of the frequency channel characteristics of the plurality of antennas.

Claim 3 (Previously Presented): The method of claim 25, wherein the adjusting step comprises:

dividing the transmitted signal by the magnitude of a channel response vector.

Claim 4 (Previously Presented) The method of claim 25, wherein the adjusting step comprises:

dividing the transmitted signal by a channel response vector.

Claim 5 (Previously Presented): The method of claim 25, wherein the adjusting step comprises:

compensating, respectively, the phase of the subcarrier signals at a transmission side according to the detected frequency channel characteristics.

Claim 6 (Previously Presented): The method of claim 25, further comprising the step of:

selecting for transmission, an antenna element having the best channel characteristics for the subcarrier signal, based on the detected frequency channel characteristics at each antenna element for each subcarrier signal.

Claim 7 (Previously Presented): The method of claim 25, further comprising the step of:

distributing the power of the transmission signal to all of the plurality of antenna elements according to subcarrier frequency characteristics of a corresponding antenna element.

Claim 8 (Previously Presented): The method of claim 25, wherein the adjustment step comprises:

limiting an adjustment of the magnitude of the subcarrier signal to an upper threshold.

Claim 9 (Previously Presented): The method of claim 8, further comprising the step of:

fixing the transmission power of the corresponding subcarrier at the upper threshold and adapting a modulation scheme for the subcarrier signal when the upper threshold is reached for the subcarrier signal.

Claim 10 (Previously Presented): The method of claim 9, further comprising the step of:

signaling the adaptation of the modulation scheme of a subcarrier signal to the a receiving side.

Claim 11 (Previously Presented): The method of claim 9, further comprising the step of:

adapting the modulation scheme of a subcarrier signal by simplifying the modulation scheme.

Claim 12 (Previously Presented): The method of claim 9, further comprising the step of:

adapting the modulation scheme of a subcarrier signal by not modulating the subcarrier signal.

Claim 13 (Previously Presented): The method of claim 9, wherein:

when the modulation scheme of a subcarrier signal is adapted to reduce the bit rate of this the subcarrier signal, the modulation scheme of at least one other subcarrier signal is changed to a more complex modulation scheme.

Claim 14 (Previously Presented): The method of claim 25, wherein the step of detecting frequency channel characteristics comprises:

detecting the frequency channel characteristics on the basis of received pilot symbols.

Claim 15 (Previously Presented): Computer software program product configured to implement a method according to claim 25 when run on a computing device of a transmitting device.

Claim 16 (Canceled).

Claim 17 (Previously Presented): The device of claim 26, wherein the means for adjusting comprises:

a division means for dividing the subcarrier signals respectively by a sum of the squared magnitude of the frequency channel characteristics of all sub-carrier signal.

Claim 18 (Previously Presented): The device of claim 26, wherein the means for adjusting comprises:

a phase compensator configured to adjust the phase of the subcarriers respectively according to the detected frequency channel characteristics.

Claim 19 (Previously Presented): The device of claim 26, wherein:

the means for adjusting limits the amplitude of the subcarrier to an upper threshold.

Claim 20 (Previously Presented): The device of claim 26, wherein:

the transmission device is a base station of a wireless transmission system.

Claim 21 (Previously Presented): A method for transmitting signals using a plurality of subcarriers through a plurality of antenna elements in multicarrier transmission system, the method comprising the steps of:

detecting subcarrier channel response vectors corresponding to said plurality of antenna elements, wherein each of said channel response vectors includes subcarrier related elements  
corresponding to said plurality of subcarriers, and

adjusting transmission characteristics of said plurality of subcarriers in accordance with amplitude and/or phase of at least one of said detected subcarrier channel response vectors.

Claim 22 (Previously Presented): A method for transmitting signals using a plurality of subcarriers in transmission system, the method comprising the following steps:

generating said signals by using a plurality of antenna elements;

obtaining vector elements indicating subcarrier channel transmission characteristics of said plurality of subcarriers at each of said plurality of antenna elements, wherein each of said vector elements is associated with one of said plurality of subcarriers, and

adjusting an amplitude and/or a phase of each of said plurality of subcarrier in accordance with said obtained vector elements.

Claim 23 (Previously Presented): A method for transmitting signals using a plurality of subcarriers in transmission system, the method comprising the following steps:

generating said signals by using a plurality of antenna elements;

adjusting amplitudes and phases of said plurality of subcarriers on the bases of subcarrier channel response vectors indicating subcarriers frequency characteristics of said plurality of subcarriers at each of said plurality of antenna elements.

Claim 24 (Previously Presented): A method for transmitting orthogonal frequency division multiplex (OFDM) symbols to be transmitted by using a plurality of OFDM subcarriers in an OFDM transmission system, the method comprising the following steps:

generating said OFDM symbols to be transmitted by using a plurality of antenna elements;

obtaining subcarrier channel response vectors corresponding to said plurality of antenna elements, wherein each of said subcarrier channel response vectors has subcarrier related elements corresponding to said plurality of subcarriers, and

applying weighting value to each of said plurality of subcarriers of said OFDM symbols in accordance with a complex conjugate of said obtained subcarrier channel response vectors.

Claim 25 (Previously Presented): A method for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a wireless transmission system, wherein the OFDM signal comprises a plurality of subcarriers, the method comprising:

first elements detecting frequency channel characteristics of each subcarrier of the OFDM signal for each of said plurality of antenna elements,

adjusting at least one of the amplitude and phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier frequency channel or all subcarrier frequency channels, and

transmitting the OFDM signal by using the adjusted subcarriers via said plurality of antenna elements.

Claim 26 (Previously Presented): A transmission device adapted for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a multi-carrier transmission system, wherein the OFDM signal uses a plurality of subcarriers,

the transmission device comprising:

means for detecting the frequency subcarrier channel characteristics of each of the plurality of subcarriers for each of said plurality of antenna elements,

means for adjusting amplitude and/or phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier channel, and

means for transmitting the OFDM signal by using the adjusted subcarrier signals via the plurality of antenna elements.

Claim 27 (New): The method of claim 25, wherein the detected frequency characteristics are subcarrier channel response vectors.

Claim 28 (New): The transmission device of claim 26, wherein the detected frequency characteristics are subcarrier channel response vectors.